

Observation of the Occultation of Saturn by the Moon,
1888, June 13. By John Tebbutt.

The occultation of *Saturn* by the Moon on the 13th instant was observed here under unfavourable conditions. The disappearances of three objects were observed at the dark limb in the following order. A star of the $7\frac{1}{2}$ magnitude, afterwards identified as +19° No. 2026 of Argelander's Bonner Sternverzeichniss disappeared at the south limb at $6^h 41^m 22^s.0$, local mean time. Had this star been a few seconds further south it would have escaped occultation. Considering that the phenomenon was almost a graze the star disappeared more suddenly than I had anticipated. The next object which disappeared was a star of the 8th magnitude a few seconds south of the planet's centre, but preceding it by about 9.4 seconds of time. The disappearance occurred at $6^h 50^m 57^s.4$, and as this star could not be found on following evenings in the same position with reference to Argelander's star above referred to, it must doubtless be identical with the satellite *Titan*. *Saturn* was badly defined at the time of its disappearance. The indentation of the ring by the Moon's limb was first noted at $6^h 51^m 20^s.6$. For some seconds before the final disappearance the planet appeared as a bright badly defined double spot just within the lunar limb. The last ray from the planet disappeared at $6^h 52^m 13^s.6$. The time of the planet's actual reappearance could not be observed in consequence of a narrow band of clouds about three degrees above the horizon. When the Moon's bright limb, then boiling violently, emerged from the cloud at $7^h 45^m 48^s.5$, the planet was seen separated from it by a few seconds of arc. As the occultation was shut out from observation with the 8-inch equatorial, the $4\frac{1}{2}$ -inch telescope had to be employed.

Windsor, N. S. Wales:
1888, June 26.

Observations of Comet Sawerthal taken at the Adelaide Observatory. Lat. $34^{\circ} 55' 33''$ S.; Long. $9^{\text{h}} 14^{\text{m}} 21^{\text{s}}$ E.

(Communicated by Charles Todd, C.M.G., Government Astronomer.)

Date 1888 A.M.T.	Name of Ref. Star.			Apparent Position of Reference Star.			Diff. $\phi - \star$			Correction for Diff. Refrac.			Apparent Position of Comet.		
	h	m	s	R.A.	o	'	R.A.	m	s	R.A.	s	"	h	m	s
Feb. 23 15 30	...	...	...	...	...	...	...	...	...	...	...	...	19 41 10	140 0 35	"
" 25 16 0	Argentine	27367	19 53 16.0	137 42 3	-1	4.1	-29	57	...	...	...	...	19 52 11.9	137 12 6	"
" 27 15 39 36.07	"	27562	20 2 20.04	134 13 6.03	-0	6.58	+7	56.4	.00	+0.2	20 2 13.46	134 21 2.6	"	"	"
" 29 16 10 17.46	"	27739	20 9 13.73	131 14 45.2	+1	17.62	+7	37.8	.00	+0.2	20 10 31.35	131 22 23.2	"	"	"
Mar. 12 16 19 55.10	"	28854	20 57 7.49	113 4 50.1	+0	36.96	+0	13.3	.00	0.0	20 57 44.45	113 5 3.4	"	"	"
" 18 16 40 1	"	29400	21 21 14.45	104 4 25.3	-3	22.95	+10	15.1	-0.3	+0.5	21 17 51.47	104 14 40.9	"	"	"
" 26 16 57 49.96	Weisse	1056	21 46 30.89	93 42 6.7	-2	57.11	-10	38.0	+0.3	-0.6	21 43 33.81	93 31 28.1	"	"	"
Apr. 4 17 9 49.42	"	147	22 9 38.78	83 31 45.1	+1	46.81	-11	55.8	+0.6	-0.9	22 11 25.65	83 19 48.4	"	"	"

From the observations of March 12, 18, and 26, the following parabolic elements have been computed by Mr. E. C. Cooke, Assistant-Astronomer.

$T = \text{Mar. } 16.970 \text{ G.M.T.}$
 $i = 42^{\circ} 14' 36''$
 $\pi = 245^{\circ} 19' 35''$
 $\log q = 9.8445376$
 $\delta = 245^{\circ} 28' 6''$
Motion direct.

Adelaide Observatory:
1888, May 14.